

Soybean Products *A Recipe for Disaster?*

Numerous studies show that soybean-based products are not as healthy for us as we'd like to believe.

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Stopping Crib Death
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INFANT FORMULAS IN 'HOT WATER'

Sudden infant death is not so sudden at all. As I argue in my book (co-written with Lendon Smith, MD), crib (or cot) death is neither random nor sudden, and the causes are known. Preventive techniques have been known and used with 100 per cent success for 40 years, and many studies have been published.

This book has been written with new mothers in mind, and the benefits of breastfeeding are emphasised throughout. However, the fact is that some babies will *not* be breastfed. So, it is appropriate here to suggest alternative, healthy formulas for feeding these babies, and also to raise some of the problems associated with various types of commercial formulas. Indeed, this information is relevant to the good health and well-being of us all, so we would do well to take it on board.

Concerning formula for babies who are not being nursed, important information is provided by Sally W. Fallon, M.A., and Mary G. Enig, Ph.D., in *Health Freedom News*, September 1995 issue. Sally Fallon has extensively studied genuine versions of native cooking methods. Dr Enig, associated with the University of Maryland, is regarded as the greatest American authority in the field of lipid chemistry, i.e., the chemistry of fats and oils. The following passages on soy products are drawn heavily from their important article, and are quoted with their permission.¹

"The soybean contains large quantities of a number of harmful substances. First among them are potent enzyme inhibitors which block the action of trypsin and other enzymes needed for protein digestion. These 'anti-nutrients' are not completely deactivated during ordinary cooking and can produce serious gastric distress, reduced protein digestion and chronic deficiencies in amino acid uptake. In test animals, diets high in trypsin inhibitors cause enlargement and pathological conditions of the pancreas, including cancer.¹

"The food industry touts soy products for their cancer-preventing properties. Isoflavone aglycones are anticarcinogenic substances found in traditionally fermented soybean products. However, in *non-fermented* soy products such as tofu and soy milk, these isoflavones are present in an altered form as beta glycoside conjugates, which have no anticarcinogenic effect.² Some researchers believe the rapid increase in liver and pancreatic cancer in Africa is due to the introduction of soy products there.³

"While fermented soy products contain protein, vitamins, anticarcinogenic substances and important fatty acids, they can under no circumstances be called nutritionally complete. Like all pulses [members of the legume family], the soybean lacks the vital sulfur-containing amino acids cystine and methionine, which our bodies do not synthesise. These are usually supplied by rice and other grains in areas where the soybean is traditionally consumed.

"Soy should never be considered as a substitute for animal products like meat or milk. Claims that fermented soy products like tempeh can be relied on as a source of vitamin B12, necessary for healthy blood and nervous system [and much more], have not been supported by scientific research."⁵

Soy protein isolate is the main ingredient of soy-based infant formulas. That means, "the soy protein isolated from the carbohydrate and fatty acid components that naturally occur in the bean. Soybeans are first ground and subjected to high temperature and solvent extraction processes to remove the oils. The resultant defatted meal is then mixed with an alkaline solution and sugars in a separation process to remove fiber; then it is precipitated and separated using an acid wash.

"Finally, the resultant curds are neutralised in an alkaline solution and spray-dried at

high temperatures to produce high-protein powder. This is a highly refined product in which both vitamin and protein quality are compromised, but some trypsin inhibitors remain, even after such extreme refining! Trypsin inhibitor content of soy protein isolate can vary as much as fivefold. In rats, even low-level trypsin-inhibitor soy protein isolate feeding results in reduced weight-gain compared to controls.⁶

"Soy product producers are not required to state trypsin inhibitor content on labels, nor even to meet minimum standards; and the public, trained to avoid dietary cholesterol, a substance vital for normal growth and metabolism, has never heard of the potent anti-nutrients found in cholesterol-free soy products.⁷

"Along with trypsin inhibitors, these formulas have a high phytate content. Use of soy formula has caused zinc deficiency in infants.⁸ Aluminum content of soy formulas is 10 times greater than milk-based formula, and 100 times greater than unprocessed milk.⁹ Aluminum has a toxic effect on the kidneys of infants, and has been implicated as causing Alzheimer's disease in adults [recent research points the finger of guilt strongly at mercury from amalgam fillings].¹⁰

"Soy milk formulas are often given to babies with milk allergy; but allergies to soy are almost as common as those to milk.¹¹ Use of soy formulas to treat infant diarrhoea has had mixed results, some studies showing improvement with soy formula while others show none at all.¹²

"A number of other substances, which are unnecessary and of questionable safety, are added to soy formulas including carrageenan, guar gum, sodium hydroxide (caustic soda), potassium citrate monohydrate, tricalcium phosphate, dibasic magnesium, phosphate trihydrate, BHA and BHT [butylated hydroxytoluene, an artificial antioxidant; neither it nor BHA has been proved safe for human consumption]. Nitrosamines, which are potent carcinogens, are often found in soy protein foods, and are greatly increased during the high-temperature drying process.⁶

PHYTATE INTERFERENCE

"Not surprisingly, animal feeding studies show a lower weight-gain for rats on soy formula than those on whole milk, high-lactose formula;¹³ similar results have been observed in children on macrobiotic diets which include the use of soy milk and large amounts of whole grains. Children brought up on high phytate diets tend to be thin and scrawny.¹⁸

"Also known as phytic acid—an organic acid—these phytates are present in the bran or hulls of all seeds; they block the uptake of essential minerals—calcium, magnesium, iron and especially zinc—in the intestinal tract. Phytates found in soy products interfere with zinc absorption more completely than with other minerals.¹⁴ Zinc is called the intelligence mineral because it is needed for optimal development and functioning of the brain and nervous system. It plays a role in protein synthesis and collagen formation; it is involved in the blood-sugar control mechanism and thus

protects against diabetes; it is needed for [immunity and for] a healthy reproductive system."¹¹

Literature extolling soy products tends to minimise the role of zinc in human physiology and to gloss over the deleterious effect of diets high in phytic acid.¹

"Only a long period of fermentation will significantly reduce the phytate content of soybeans. Thus-fermented products such as tempeh and miso provide nourishment that is easily assimilated; but the nutritional value of tofu and bean curd, both high in phytates, is questionable. Asian and oriental children who do not get enough meat and fish products to counteract the effect of a high phytate diet, frequently suffer rickets, stunting and other growth problems.¹⁵

"Scientists are in general agreement that grain- and legume-based diets high in phytates contribute to widespread mineral deficiencies in third world countries.¹⁶ Analysis shows that calcium, magnesium, iron and zinc are present in the plant foods eaten in these areas, but the high phytate content of soy- and rice-based diets prevents their absorption.

"The soybean has a higher phytate content than any other grain or legume that has been studied.¹⁷ Furthermore, it seems to be highly resistant to many phytate-reducing techniques such as long, slow cooking. In test animals they cause enlarged organs, particularly the pancreas and thyroid gland, and increased deposition of fatty acids in the liver."^{18,19}

TRYPSIN INHIBITORS AND DENATURED PROTEINS

"Trypsin inhibitors and haemagglutinin, a clot-promoting substance that causes red blood cells to clump together (a situation that hardly promotes cardiac health), are both found in soybeans. They have both been labelled 'growth-depressant substances'. These are deactivated during the process of fermentation.¹ This involves soaking in an alkaline solution. The puréed solution is then heated to about 115°C (239°F) in a pressure cooker.

"This method destroys most (but not all) of the anti-nutrients but has the unhappy side-effect of so denaturing the proteins that they become very difficult to digest and much reduced in effectiveness.²⁰

"The phytate content remains in soy milk to block the uptake of essential minerals. In addition, the alkaline soaking solution produces a carcinogen, lysine-lysine, and reduces the cystine content, which is already low in the soybean.²¹ [Cystine/cysteine are essential for liver detoxification of the hundreds of chemicals to which we are all exposed every day, mostly indoors.] Lacking cystine, the entire protein complex of the soybean becomes useless unless the diet is fortified with cystine-rich meat, eggs, or dairy products.

"The growth of vegetarianism among the more affluent classes has greatly accelerated the acceptability and use of these ersatz products. This helps American farmers to sell their enormous yearly output of soybeans. Unfortunately, as we have seen, they pose numerous dangers."¹¹

The fatty acid profile of the soybean includes large amounts of

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beneficial omega-3 fatty acids compared to other pulses; but these omega-3 fatty acids are particularly susceptible to rancidity when subjected to high pressures and temperatures. This is exactly what is required to remove oil from the bean, as soybean oil is particularly difficult to extract.

Hexane or other solvents are always used to extract oil from soybeans, and traces remain in the commercial product.¹ Hexane is "any of the five colorless, volatile, liquid hydrocarbons C₆H₁₄ of the paraffin series". Do you really think that ingestion of hexane, even in tiny quantities, will benefit your baby?

COWS' MILK-BASED FORMULAS

What about cows' milk-based formulas? Studies have linked modern commercial milk products with serious afflictions such as allergies, asthma, arthritis, autoimmune diseases, cancer, childhood anaemia and heart disease. For example, Dr J. C. Annand made an epidemiological study of the effect of milk pasteurisation on cardiac and stroke mortality in the 1920s. He found there had been a significant sudden rise in mortality from heart attack and stroke within, at most, two years after the start of compulsory Holder pasteurisation. The milk was heated for 30 minutes to not less than 145°F (62.8°C).²³

A clinical trial appeared to confirm Annand's hypothesis: "All patients suffering from AHD [atherosclerotic heart disease], who maintained a diet devoid of [extended-period] heated milk protein, either showed a sustained improvement in their condition or failed to deteriorate further. On the other hand, patients who for various reasons did not maintain this diet evinced a high incidence of thrombosis and/or cardiac irregularities together with congestive failure."²³

Later, researchers at the Institut National Agronomique in Paris found that consuming plain commercial milk boosted the risk of cataracts among people, especially diabetics, who are able to digest lactose, a milk sugar. Such digestion releases galactose, a substance the researchers blamed for promoting cataracts.

But, natural milk products have a long history of conferring good health in many parts of the globe. For example, the three areas noted for great longevity of local populations—the Caucasus Mountains in the southern republics of the former Soviet Union, the village of Vilcabamba in Ecuador, and the land of the Hunza in northern India—all use whole unprocessed milk products. And Weston Price, studying isolated population groups in the 1930s, found many supremely healthy populations using cows' milk as their principal food.²³ Milk products form the backbone of the Hindu diet.

J. E. Crewe at the Mayo Clinic, in 1929 cured patients of anaemia, hypertension, tuberculosis and many other diseases and conditions using large quantities of raw milk. In his work, pasteurised milk accomplished little against disease because, he wrote, "the heat of pasteurising destroys the enzymes in milk, needed for its complete utilisation and to enable it to do its healing wonders.

"Processing is the problem," according to Fallon and Enig. "The path that transforms healthy milk products into allergens and carcinogens begins with modern feeding methods that substitute high-protein, soy-based feeds for fresh green grass; and breeding

methods to produce cows with abnormally large pituitary glands so that they produce three times more milk than the old-fashioned scrub cow. These cows need antibiotics to keep them well.

"Their milk is then pasteurised so that all valuable enzymes are destroyed: lactase for the assimilation of lactose; galactase for the assimilation of galactose; phosphatase for the assimilation of calcium. Literally dozens of precious enzymes are destroyed in the pasteurisation process; without them milk is very difficult to digest. The human pancreas is not always able to produce these enzymes; overstress of the pancreas can lead to diabetes and other diseases.

"The butterfat of commercial milk is homogenised, subjecting it to rancidity or, even worse, removed altogether. Skim milk is sold as a health food but the truth is that butterfat is in milk for a reason. Without it the body cannot absorb and utilise the vitamins and minerals in the water fraction of the milk.

"Along with valuable trace minerals and short-chain fatty acids, butterfat is America's best source of preformed vitamin D. Synthetic vitamin D, known to be toxic to the liver, is added to replace the natural vitamin D complex in butterfat. Butterfat also contains re-arranged acids which have strong anticarcinogenic properties."²⁶

Further, non-fat dried milk is added to 1% and 2% milk. Unlike the cholesterol in fresh milk, which plays a variety of health-promoting roles, the cholesterol in nonfat dried milk is oxidised and it is this rancid cholesterol that promotes heart disease.²⁷ The multi-source oxysterols injury theory brought together oxysterols from oxidised powdered milk, powdered egg yolk, etc.; those generated internally by homocysteine and from other sources; Matthias Rath's and cellular biologist Bruce H. Lipton's theories into a composite explanation of atherogenesis, the beginning of arterial damages.²⁸⁻³⁰

In Part 5 of my book, I describe how oxidised dried milk can contribute to causing a little-known kind of crib death.

Fallon and Enig point out that "...like all spray-dried products, non-fat dried milk has a high nitrite content [as is well-known, nitrites are carcinogenic]. Non-fat dried milk and sweetened condensed milk are the principal dairy products in third world countries; use of ultra-high-temperature pasteurised milk is widespread in Europe.¹

"Further, soy formulas lack cholesterol, which is absolutely essential for the development of the brain and nervous system; they also lack lactose and galactose, which play an equally important role in the development of the nervous system."¹

What can conscientious mothers substitute, not only to protect their babies from sudden death but to help build their best long-term health? Fallon and Enig have proposed the following¹ for the reasons given above:

"Neither milk-based nor soy-based infant commercial formulas can be recommended for optimal development of the infant. Mothers who cannot breastfeed, for whatever reason, should prepare homemade formula based on whole milk for their babies. The rare child allergic to whole milk formula should be given a whole food meat-based formula, not one made of soy protein isolate. [These suggestions will appeal most to mothers who are not employed away from home.]

... soy formulas lack cholesterol, which is absolutely essential for the development of the brain and nervous system; they also lack lactose and galactose, which play an equally important role in the development of the nervous system.

MILK-BASED FORMULA¹

Makes 32 ounces (approx. 1 litre)

Ingredients:

2 cups (16 ounces, or 0.47 litres) raw organic milk or cultured* milk, not homogenised
1/4 cup whey
4 tablespoons lactose
1 teaspoon cod liver oil
1 teaspoon unrefined sunflower oil
1 teaspoon extra virgin olive oil
2 teaspoons [unrefined] coconut oil
2 teaspoons brewer's yeast
2 teaspoons gelatin
1 3/4 cup (14 ounces/0.4 litres) filtered water
1 100 mg tablet vitamin C, crushed

Method:

Mix gelatin with water and heat gently until gelatin is dissolved. Place all ingredients in a very clean glass or stainless-steel container and mix well.

To serve, pour 6 to 8 ounces into a very clean glass bottle, attach sterilised nipple and set in a pan of simmering water. Heat until warm but not hot to the touch, shake bottle and feed baby. (Never heat formula in a microwave oven!³¹)

Notes:

* Milk cultured with Piima powder for several days will separate into curds and fresh whey. Mothers' milk is richer in whey proteins than cows' milk. Whey assists in the uptake of minerals and contributes to healthy intestinal flora, required for absorption of nutrients and for building a strong immune system. Piima powder, for culturing fresh milk, may be ordered from the Price Pottenger Nutrition Foundation +1 (916) 574 7763.

"Time invested in preparing homemade formula will be well rewarded with the joys of conferring robust good health on your children."

"Public health officials and the National Dairy Council have worked together in this country to make it very difficult to obtain wholesome, fresh, raw dairy products. However, they can be found with a little effort. In some states you can buy raw milk directly from farmers. Whole pasteurised non-homogenised milk from cows raised on organic feed is now available in many gourmet shops and health food stores. It can be cultured to restore enzyme content, at least partially, as noted above. Cultured buttermilk is often more easily digested than regular milk; it is an excellent product to use in baking."¹

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MILK-FREE FORMULA¹

Makes 32 ounces (approx. 1 litre)

Ingredients:

3 1/2 cups (28 ounces or 0.8 litres) homemade broth (beef, lamb, chicken or fish)
2 ounces (56 grams) organic liver, cut into small pieces
5 tablespoons lactose
1/2 cup (4 ounces) whey
1 tablespoon [unrefined] coconut oil
1 teaspoon cod liver oil
1 teaspoon unrefined sunflower oil
2 teaspoons extra virgin olive oil
1 100 mg tablet vitamin C, crushed

Method:

Cook liver gently in broth until the meat is cooked through. Liquefy using a hand-held blender or in a food processor. When the liver broth has cooled, stir in remaining ingredients.

Store in refrigerator and reheat gently as needed.

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Joseph G. Hattersley is an independent medical health researcher and writer. Only a dissertation short of a Ph.D. in economics, he became a stockbroker and research analyst, but found a new calling 20 years ago, at age 54, when a serious allergy turned his attention to finding ways to improve his own and others' health.

For the last 13 years Mr Hattersley has been writing on such subjects as non-drug/non-surgical avoidance of heart attacks and the role of vitamin B6, and his work has been published in alternative medical and health journals around the world. He was a contributor to the book, *Alternative Medicine: The Definitive Guide* (1993), for which he wrote the chapter on cardiac health.

Working with two Australian physicians, Mr Hattersley has been writing a book on heart attacks, due for 1997 publication by Lothian, Melbourne. His other new book, tentatively titled *Stopping Crib Death* (co-written with Dr Lendon Smith, et al.), is scheduled for late 1997/early 1998 release.